UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/009,108 | 04/22/2002 | Mitsuaki Oyamada | 9792486-0112 | 5522 |

7590 04/01/2004

David R Metzger
Sonnenschein Nath & Rosenthal
Wacker Drive Station
PO Box 061080
Chicago, IL 60606-1080

| EXAMINER | |
|---|---|
| ANGEBRANNDT, MARTIN J | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1756 | |

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/009,108 | OYAMADA ET AL. | |
| | Examiner | Art Unit | |
| | Martin J Angebranndt | 1756 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The response provided by the applicant has been read and given careful consideration. Responses to the arguments offered by the applicant are presented after the first rejection to which they are directed.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Fukui et al. '873.

Fukui et al. '873 describes example 4 in table 2, which has the same substrate, recording layer and protective layer as used in example 1 and uses IR absorptive compound 1-18 shown in column 6. The recording layer can have a reflective layer adjacent to it on either side. (19/1-3).

The examples in the instant specification discuss the use of a light transmitting thermoplstic resin as the protective layer [0037 in prepub] and PMMA is disclosed as a thermoplastic resin [0023 in prepub]. Example 4 of the reference was formed in the same manner as example 1 which uses a PMMA substrate with the recording layer spin coated thereon and a PMMA substrate formed thereon. As PMMA is a transparent thermoplastic resin as disclosed in the instant specification and the dye used in example 4 is bounded by the dyes

structure disclosed in the instant specification [0028] and is similar to that of chemical formula 3, the cited example is held to anticipate the claimed invention. The spectral absorptivity of the dye is considered inherent to its structure. The applicant may choose to show that the dye of cited example 4 does not absorb in that regions, but that is unlikely to occur as the evidence of Skoog and West indicate that benzene (phenyl) has a strong absorption in the 204-286 nm and 256-312 nm due to the $E_2$ and B transitions respectively. The applicant is still claiming the medium and not the process and an apparatus as the limitations are functionally descriptive and neither process of use steps, nor the presence of the laser are required.

5. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. '121.

Sato et al. '121 discloses in example 1, the coating of a recording layer including compound 11 (shown in columns 5 and 6), but does not use a protective layer. The provision of a protective layer is disclosed as preventing damage, contamination (dirt and dust) and improving the chemical stability of the recording layer (19/53-59). Useful materials include polymers, silicon dioxide, magnesium fluoride, silicon monoxide, titanium dioxide and zinc dioxide. (19/36-59). The use of polycarbonate as an underlayer material is disclosed in example 11. Polyamide is used in example 12 as a protective layer material.

It would have been obvious top one skilled in the art to modify the invention of example 1 of Sato et al. '121 by adding a protective layer to prevent damage to the recording layer from dust and the like and to improve its stability based upon the disclosure of the reference.

Example 1 of the reference uses a recording layer bounded by the dyes structure disclosed in the instant specification [0028] and is similar to that of chemical formula 3, the cited

example is held to render the claims obvious in view of the direction to protective layers including transparent materials such as those disclosed as useful for the underlayer. The spectral absorptivity of the dye is considered inherent to its structure. The applicant may choose to show that the dye of cited example 1 does not absorb in that regions, but that is unlikely to occur as the evidence of Skoog and West indicate that benzene (phenyl) has a strong absorption in the 204-286 nm and 256-312 nm due to the $E_2$ and B transitions respectively. The applicant is still claiming the medium and not the process and an apparatus as the limitations are functionally descriptive and neither process of use steps, nor the presence of the laser are required.

6. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. JP 03-000291.

Sato et al. JP 03-000291 discloses in examples 1-15, the coating of a recording layer including compound shown in table 2 (page 4), but does not use a protective layer. The provision of a protective layer is disclosed in the abstract as well as the body of the text.

It would have been obvious top one skilled in the art to modify the invention of examples 1-15 of Sato et al. JP 03-000291 by adding a protective layer to prevent mechanical damage to the recording layer based upon the disclosure to do so.

As discussed above, the applicant is still claiming the medium and not the process and an apparatus as the limitations are functionally descriptive and neither process of use steps, nor the presence of the laser are required. Examples 1-15 of the reference uses a recording layer bounded by the dyes structure disclosed in the instant specification [0031] and that used in examples 4 and 5 is identical to that of chemical formula 6, the cited examples are held to render the claims obvious in view of the direction to protective layers including transparent materials such as those

disclosed as useful for the underlayer. The spectral absorptivity of the dye is considered inherent to its structure. The applicant may choose to show that the dye of cited examples 1-15 do not absorb in that regions, but that is unlikely to occur as the evidence of Skoog and West indicate that benzene (phenyl) has a strong absorption in the 204-286 nm and 256-312 nm due to the $E_2$ and B transitions respectively.

7. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over **either** Kobayashi et al. JP 10-337957 (machine translation attached) **or** Morishima et al. '024, in view of Morimoto et al. '345 and Sato et al. '121.

Kobayashi et al. JP 10-337957 (machine translation attached) teach the use of compounds embraced by the language of formula II, where the substituents may be aryl groups [0014]. The reflective and protective layers are placed atop the recording layer.

Morishima et al. '024 teach the use of compounds embraced by the language of formula I-5, where the substituents may be aryl groups (10/20-39). The reflective and protective layers are placed atop the recording layer. (34/64-67)

Morimoto et al. '345 teaches that the reflective layer may be placed atop the recording layer when the medium is to be read through the substrate and between the recording layer and the substrate when the medium is designed to be read from the side opposite the substrate. (6/42-65).

It would have been obvious to modify the teachings of **either** Kobayashi et al. JP 10-337957 (machine translation attached) **or** Morishima et al. '024 by using the disclosed compound bearing the aryl moieties based upon the disclosure of equivalence and to place the reflective layer between the recording layer and the substrate to allow for reading and writing from the

topside, opposite the substrate based upon the disclosure of Morimoto et al. '345 and the teachings of equivalence of the orientations within Sato et al. '121.

The examiner relies upon the basis discussed above and noting that the dyes disclosed in the Kobayashi et al. JP 10-337957 (machine translation attached) **or** Morishima et al. '024 references are clearly embraced by the structures of the instant dyes set forth in claim 6.

8. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 07-133437.

JP 07-133437 (machine translation attached) describes example 11 in tables 6 and 7, which has the same substrate, recording layer and protective layer as used in section [0176] and uses IR absorptive compound 1-19 [0053], which is composed of compound 9' shown in section [0028]. The recording layer can have a reflective layer as an undercoating [0137].

Example 11 of the reference uses a recording layer bounded by the dyes structure disclosed in the instant specification specification [0031] and that used in example is similar to that of chemical formula 6, the cited example is held to render the claims obvious in view of the direction to protective layers including transparent materials such as those disclosed as useful for the underlayer. The spectral absorptivity of the dye is considered inherent to its structure. The applicant may choose to show that the dye of cited example11 does not absorb in that regions, but that is unlikely to occur as the evidence of Skoog and West indicate that benzene (phenyl) has a strong absorption in the 204-286 nm and 256-312 nm due to the $E_2$ and B transitions respectively. The applicant is still claiming the medium and not the process and an apparatus as the limitations are functionally descriptive and neither process of use steps, nor the presence of the laser are required.

9. Claims 1,4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cumpston et al. '931.

Cumpston et al. '931 teaches the addition of saturable absorbers to photopolymer systems, which are cured with holograms therein. Laser light is then used to selectively heat areas containing the saturable absorbers and deform the cured media (11/42-62). Saturable absorbers disclosed include fullerenes. (11/23). Figures 5c and 5d show cover layers (136) (16/34) Figures 3 and 6 also appear to have cover layers.

It would have been obvious to one skilled in the art to modify the invention of figures 5c and 5d to use fullerenes as the saturable absorbers based upon the disclosure to do so.

The examiner relies upon the basis discussed above and noting that the fullerenes disclosed in the Cumpston et al. '931 are clearly embraced by the language of claims 4 and 5.

**10 THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Martin J Angebranndt
Primary Examiner
Art Unit 1756

03/29/2004